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			2838	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/604,703

Applicant(s)

ELDER ET AL.

Examiner

Pia F Tibbits

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-87 is/are pending in the application.
- 4a) Of the above claim(s) 1-36 and 63-87 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

This Office action is in answer to the election filed originally on 8/24/2004 and faxed to the examiner 1/10/2005, since the original document faxed to the central fax number on 8/24/2004 was lost. Claims 1-87 are pending, and claims 37-62 are elected.

1. Examiner notes, and agrees with applicant's comments that the instant application is an utility application and the restriction is governed by the rules set forth in MPEP §803, and the restricted groups are patentably distinct inventions under the provisions of MPEP §806.05 and related under MPEP §806.05(c) as combination/subcombination. Applicant's election of Group II, claims 37-62 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse. **MPEP 818.03** (a) states that "As shown by the first sentence of 37 CFR 1.143, the traverse to a requirement must be complete as required by 37 CFR 1.111(b) which reads in part: "In order to be entitled to reconsideration or further examination, the applicant or patent owner must reply to the Office action. The reply by the applicant or patent owner must be reduced to a writing which distinctly and specifically points out the supposed errors in the examiner's action and must reply to every ground of objection and rejection in the prior Office action. The applicant's or patent owner's reply must appear throughout to be a bona fide attempt to advance the application or the reexamination proceeding to final action."

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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3. Claims 37-62 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-29 of copending Application No. **10/708739** in view of **McDermott et al.** [hereinafter McDermott][6545445].

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both describe a multiple battery system comprising a main battery having a main positive output and a main negative output; at least one auxiliary battery having an auxiliary positive output and an auxiliary negative output; a main electrical circuit comprising a coupling of the positive terminal with a switching device, the switching device having at least two operating positions to selectively couple the main battery and the auxiliary battery to the common positive terminal, wherein in a first operating position provides charge to both the main and the auxiliary battery; and a controller switching the switching device based on input from a sensor.

Application No. 10/708739 does not recite a battery housing having a common positive terminal and a common negative terminal each coupled to an electrical system.

McDermott discloses a multiple battery system housing 300 [see fig.3] having a common positive terminal 306 and a common negative terminal 308 each coupled to an electrical system [see column 6, lines 15-17]. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify (Application No. 10/708739)'s apparatus and include a multiple battery system housing having a common positive terminal and a common negative terminal each coupled to an electrical system, as disclosed by McDermott, in order to provide protection and avoid deterioration of the battery system.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the SCR, the heat sink, the main battery cold cranking amperage sensor, the auxiliary battery cold cranking amperage sensor, the auxiliary battery voltage

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sensor, the switching device sensor, the written instruction, etc. must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "**Replacement Sheet**" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the conventional names, as described in the specification, e.g. controller, timer, etc. for the elements shown in the figure drawings with non-conventional symbols. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept

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the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. For example,

a) in paragraph [0045] "at a point beyond the one-way charging circuit to the auxiliary battery positive" needs to be defined.

b) in paragraph [0087] "the size of the at heat sink or sinks" needs to be corrected.

c) in paragraph [0052] "the discharge system can also **be** a written instruction to manually switch the battery system" needs to be defined.

d) in paragraph [0090] "an operator or controller manipulates the switching device" needs to be defined, since the present description implies that in an operator-driven vehicle, where the batteries are used, there is a toggle switch to "select" the battery to be used, while the car is driven?

e) in paragraph [0072] "auxiliary discharge cycling system" needs to be corrected to read "auxiliary battery discharge cycling system", since there is **no other** discharge cycling system.

7. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter: "between and preceding the auxiliary battery"; "input from the at least one switching device sensor"; "short periods", etc. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction is required.

8. Applicant is reminded to use consistent language throughout the disclosure in order to facilitate finding support for the recited limitations, as well as to provide proper antecedence for all claimed limitations.

Claim Objections

9. Claim 37, 40, 56, 58, 60 are objected to because of the following informalities:

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Claim 37: "a first operating position of said at least two operating positions the common positive terminal to the main positive output and auxiliary positive output in parallel with each other, **and**; a second operating position of said at least two operating positions which couples the common positive terminal to the auxiliary positive such that the common positive terminal is coupled at a point beyond the one-way charging circuit to the auxiliary battery positive terminal couples the common positive terminal to the auxiliary positive such that the common positive terminal is coupled at a point beyond the one-way charging circuit to the auxiliary battery positive" should be corrected and clarified.

Claim 40: "the one-way charging circuit permits electrical energy from the electrical system to flow into both the main and auxiliary batteries, but prevents electrical energy from flowing out of the auxiliary battery" is incorrect as charging/discharging could only be done one at a time.

Claim 56: a) "an auxiliary cold cranking amperage sensor" should be corrected to read --- the auxiliary battery cold cranking amperage sensor---.

b) the recitation "input from the at least one switching device sensor" lacks antecedence in the drawings and specification, and contradicts the recitation in claim 55, upon which claim 56 depends, i.e., "one sensor in communication with the controller".

c) the recitations "a main battery cold cranking, and an auxiliary cold cranking amperage sensor" need to be clarified since batteries **get rated for CCA** (critical use conditions), the CCA does not need to be "sensed".

Claim 58: "the discharge system" lacks antecedence.

Claim 60: a) "the discharge system comprises **a written instruction** to manually switch the battery system" needs to be described in the drawings and the specification, i.e., define the written instruction.

b) claim 60 recites "a written instruction to manually switch the battery system to the second operating position for a brief period of time and then to manually switch the switching device to the first operating position", which is not clear since claim 60 depends upon claim 58, reciting a controller with a timer, i.e., automatic controller, and fig.9, "an embodiment of an auxiliary battery discharge cycling

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system", shows element 700 is a controller connected to switch 300, i.e., automatic controller. To continue prosecution it was assumed that the controller controls the switching to the respective operating position.

Art Rejection Rationale

10. At the outset, the examiner notes that claims are to be given their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See also *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) ("During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow.... The reason is simply that during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed.... An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process."). In responding to this Office action, applicants are reminded of the requirements of 37 CFR 1.111 and 1.119 that applicants specifically point out the specific distinctions believed to render the claims patentable over the references in presenting responsive arguments. See MPEP 714.02. The support of any amendments made should also be specifically pointed out. See MPEP 2163.06.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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12. Claims 37-42, 45, 54-57 are rejected under 35 U.S.C. 102(e) as being anticipated by **McDermott et al.** [hereinafter McDermott][6545445].

To continue prosecution, it was assumed that in a first operating position, both the main battery and the auxiliary battery could be connected to the system and charged, while in a second operating position the main battery is isolated so that neither DC loads, nor the auxiliary battery could drain power from the main battery.

McDermott discloses in figures 1-8 a multiple battery system 100 comprising: a battery housing 300 [see fig.3] having a common positive terminal 306 and a common negative terminal 308 each coupled to an electrical system [see column 6, lines 15-17]; a main battery 102 having a main positive output and a main negative output [see fig.4]; at least one auxiliary battery 104 having an auxiliary positive output and an auxiliary negative output [see fig.4]; a switching device 122 with at least two operating positions, the at least two operating positions selectively engaging said main battery 102 and said auxiliary battery 104 and comprising; a first operating position, when both the main battery and the auxiliary battery could be connected to the system and charged , while in a second operating position the main battery is isolated so that neither DC loads, nor the auxiliary battery could drain power from the main battery [see also column 3, lines 15-22 and lines 36-43].

As to claims 38-42, see reference and remarks for claim 37 [see also column 3, lines 39-43].

As to claim 45, McDermott clearly discloses an upper housing 402 containing the main battery, and a lower housing 404 containing the auxilliary battery [see fig.4].

As to claims 54-56, McDermott clearly discloses a controller 108 coupled to the main electrical circuit and switching said at least one switching device based on input from an at least one sensor 116 (current input) and 118 (voltage input) [see column 4, lines 40-58].

As to claim 57, McDermott clearly discloses an auxiliary battery discharge system [see column 4, lines 52-53].

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Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 43, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over **McDermott**, as described above.

McDermott discloses a multiple battery system comprising: a battery housing having a common positive terminal and a common negative terminal each coupled to an electrical system; a main battery having a main positive output and a main negative output; at least one auxiliary battery having an auxiliary positive output and an auxiliary negative output; a switching device with at least two operating positions, the at least two operating positions selectively engaging said main battery and said auxiliary battery and comprising; a first operating position, when both the main battery and the auxiliary battery could be connected to the system and charged, while in a second operating position the main battery is isolated so that neither DC loads, nor the auxiliary battery could drain power from the main battery. McDermott does not disclose the main battery is one of a 6V, 12V, or 24V battery; and the at least one auxiliary battery is one of a 6V, 12V, or 24V battery.

As to claims 43 and 44, the use of a main battery that is one of a 6V, 12V, or 24V battery, and the use of a one auxiliary battery that is one of a 6V, 12V, or 24V battery: it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a selection for the voltage of the multiple batteries in order to optimally accommodate the needs of the user's system, since it has been held that discovering an "optimum" or "preferred" value for a result effective variable involves only routine skill in the art. ***In re Boesch***, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

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15. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over **McDermott**, as described above, in view of **Geibl et al.** [hereinafter Geibl][6143438].

McDermott discloses a multiple battery system comprising: a battery housing having a common positive terminal and a common negative terminal each coupled to an electrical system; a main battery having a main positive output and a main negative output; at least one auxiliary battery having an auxiliary positive output and an auxiliary negative output; a switching device with at least two operating positions, the at least two operating positions selectively engaging said main battery and said auxiliary battery and comprising; a first operating position, when both the main battery and the auxiliary battery could be connected to the system and charged, while in a second operating position the main battery is isolated so that neither DC loads, nor the auxiliary battery could drain power from the main battery. McDermott does not disclose the battery housing further comprising at least one fill tube.

Geibl discloses in fig.6 a fill tube 104, which is part of a battery housing 106 to allow electrolyte to be added to the cells and to permit servicing, if required, during the life of the battery [see column 1, lines 47-49]. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify McDermott's apparatus and include a fill tube, as disclosed by Geibl, in order to allow electrolyte to be added to the cells and to permit servicing, if required, during the life of the battery.

16. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over **McDermott**, as described above, in view of **Bromley et al.** [hereinafter Bromley][5487956].

McDermott discloses a multiple battery system comprising: a battery housing having a common positive terminal and a common negative terminal each coupled to an electrical system; a main battery having a main positive output and a main negative output; at least one auxiliary battery having an auxiliary positive output and an auxiliary negative output; a switching device with at least two operating positions, the at least two operating positions selectively engaging said main battery and said auxiliary battery and comprising; a first operating position, when both the main battery and the auxiliary battery could be connected to the system and charged, while in a second operating position the main battery is

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isolated so that neither DC loads, nor the auxiliary battery could drain power from the main battery.

McDermott does not disclose a one-way charging diode.

Bromley discloses a multiple battery system where the auxiliary/backup battery 105 charging current is provided through a steering and polarity protection diode 119 [see also column 3, lines 15-20]. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify McDermott's apparatus and include a diode in the charging path of the auxiliary battery, as disclosed by Bromley, in order to provide steering and polarity protection.

17. Claims 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over **McDermott** and **Bromley**, as described above, in view of **Dougherty et al.** [hereinafter Dougherty][5162164].

The drawings do not show a SCR. To continue prosecution it was assumed that the unidirectional current path through the one-way charging diode needs an overcurrent protection device, such as an SCR/thyristor, to selectively limits current through the diode.

McDermott and Bromley disclose a multiple battery system comprising: a battery housing having a common positive terminal and a common negative terminal each coupled to an electrical system; a main battery having a main positive output and a main negative output; at least one auxiliary battery having an auxiliary positive output and an auxiliary negative output; a switching device with at least two operating positions, the at least two operating positions selectively engaging said main battery and said auxiliary battery and comprising; a first operating position, when both the main battery and the auxiliary battery could be connected to the system and charged, while in a second operating position the main battery is isolated so that neither DC loads, nor the auxiliary battery could drain power from the main battery; and a one-way charging diode. McDermott and Bromley do not disclose a SCR.

Dougherty discloses in a dual battery system that a unidirectional current path 108 suitably comprises a diode 110 and an overcurrent protection device 112, suitably a variable resistor, polyswitch, solid-state transistor, **SCR**/thyristor, or any device, which selectively limits current through the diode [see also column 13, lines 1-10]. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify McDermott's and Bromley's apparatus and include

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an overcurrent protection device such as an SCR, as disclosed by Dougherty, in order to selectively limit current through the one-way charging diode.

Claim 49: “**between about** 25 and 95 amperage rating” is indefinite since there is nothing in the specification, prosecution history, or the prior art to provide any indication as to what range of specific activity is covered by the term “**between about**”. To continue prosecution it was assumed that “between 25 and 95 amperage rating” is considered.

As to claim 49, an SCR, an alternative name for the reverse blocking triode thyristor, having between 25 and 95 amperage rating: it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a selection for the amperage of the SCR in order to optimally accommodate the needs of the user’s system, since it has been held that discovering an “optimum” or “preferred” value for a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

As to claim 50, the main battery being a 12 V automobile battery, and the SCR having a 12V, 45 Amp rating: it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a selection for the main battery voltage and the voltage and amperage of the SCR in order to optimally accommodate the needs of the user’s system, since it has been held that discovering an “optimum” or “preferred” value for a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

18. Claims 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over **McDermott** and **Bromley**, as described above, in view of **van der Merwe** [5631535].

McDermott and Bromley disclose a multiple battery system comprising: a battery housing having a common positive terminal and a common negative terminal each coupled to an electrical system; a main battery having a main positive output and a main negative output; at least one auxiliary battery having an auxiliary positive output and an auxiliary negative output; a switching device with at least two operating positions, the at least two operating positions selectively engaging said main battery and said auxiliary battery and comprising; a first operating position, when both the main battery and the auxiliary

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battery could be connected to the system and charged, while in a second operating position the main battery is isolated so that neither DC loads, nor the auxiliary battery could drain power from the main battery; and a one-way charging diode. McDermott and Bromley do not disclose a high capacity diode and an at least one heat sink coupled to the at least one high capacity diode.

As to the use of a high capacity diode: it would have been obvious to one having ordinary skill in the art at the time the invention was made to select a high capacity diode, since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. See *In re Leshin*, 125 USPQ 416.

van der Merwe discloses a heat sink 60 adjacent to a high-capacity diode D1 to dissipate heat generated by current flowing through the diode D1 [see fig.3; column 3, lines 20-22]. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify McDermott's and Bromley's apparatus and include a heat sink 60 adjacent to a high-capacity diode, as disclosed by van der Merwe, in order to dissipate heat generated by current flowing through the diode.

Claim 52: "**between about** 25 and 95 amperage rating" is indefinite since there is nothing in the specification, prosecution history, or the prior art to provide any indication as to what range of specific activity is covered by the term "**between about**". To continue prosecution it was assumed that "between 25 and 95 amperage rating" is considered.

As to claim 52, the high capacity diode having between 25 and 95 amperage rating: it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a selection for the amperage of the SCR in order to optimally accommodate the needs of the user's system, since it has been held that discovering an "optimum" or "preferred" value for a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

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Claim 53: "heat sink ...has a **sufficient surface** area to dissipate the heat" is indefinite since there is nothing in the specification, prosecution history, or the prior art to provide any indication as to what range of specific activity is covered by the term "sufficient surface".

As to claim 53, the high capacity diode having a 12V, 45 Amp: it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a selection for the voltage and amperage of the high capacity diode in order to optimally accommodate the needs of the user's system, since it has been held that discovering an "optimum" or "preferred" value for a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

19. Claims 58-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over **McDermott**, as described above, in view of **Koenck et al.** [hereinafter Koenck] [4709202].

McDermott discloses a multiple battery system comprising: a battery housing having a common positive terminal and a common negative terminal each coupled to an electrical system; a main battery having a main positive output and a main negative output; at least one auxiliary battery having an auxiliary positive output and an auxiliary negative output; a switching device with at least two operating positions, the at least two operating positions selectively engaging said main battery and said auxiliary battery and comprising; a first operating position, when both the main battery and the auxiliary battery could be connected to the system and charged, while in a second operating position the main battery is isolated so that neither DC loads, nor the auxiliary battery could drain power from the main battery. McDermott does not disclose the discharge system comprises a controller with a timer.

Koenck discloses a battery cycling/charge-discharge/conditioning system using a battery controller/microprocessor 14 [see fig.2] with a timer [see fig.11] where an embodiment includes a main battery and a backup battery, the voltage of each may be individually measured, and each may be conditioned [see the abstract], since a battery may deteriorate when subjected to repeated shallow discharge and recharging cycles, a count of such shallow charge cycles may be automatically maintained throughout the operating life of the battery system, such that deep discharge cycles may be effected as

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necessary to maintain desired performance standards [see column 1, line 50-56]. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify McDermott's apparatus and include a battery cycling/charge-discharge/conditioning system, as disclosed by Koenck, in order to maintain desired performance standards.

As to claim 59, "short periods" is a) indefinite, and b) since "the controller with a timer" (claim 58) control the process, the duration/period will be determined according to the specific needs of the battery, which is inherent to the apparatus discloses by McDermott and Koenck.

As to claim 60, McDermott discloses that Electronics Control Module 108 receives current input 116 from shunt 114, and voltage input 118 from starter battery 102. Upon detecting a start event, the ECU 108 sends a close switch signal via switch control 120 to high current switch 122, connecting starter battery 102 to parallel circuit 106/first operating position [see column 4, lines 44-49]; when the start event is over, and/or a controlled amount of recharge has occurred, the ECU disconnects the starter battery from the circuit with the switch/second operating condition.

As to claim 61, McDermott discloses monitoring if the main battery voltage is below a trigger point/based upon monitored parameters [see column 4, lines 45, and 56-57; column 5, lines 20-21].

As to claim 62, see remarks for claims 58 and 59 above.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in PTO-892 and not mentioned above disclose related apparatus: **Dougherty et al.** [5162164] discloses a switchable dual battery, where each battery purportedly delivers 12 volts, the main battery being rated at 370 **CCA (cold crank amps)** and the reserve battery at 115 CCA. The two batteries are electrically configured in parallel, with a one-way diode disposed there between to prevent the reserve unit from discharging during periods of non-use.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Pia Tibbits whose telephone number is (571) 272-2086. If unavailable, contact

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the Supervisory Patent Examiner Mike Sherry whose telephone number is (571) 272-2084. The Technology Center Fax number is (703) 872-9306.

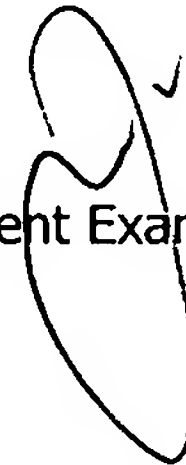
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PFT

January 15, 2005

Pia Tibbits

Primary Patent Examiner

A handwritten signature in black ink, consisting of a stylized, cursive 'P' followed by a checkmark.